

REMARKS/ARGUMENTS

Claims 1-5, 7-11 and 13-18 are pending in the present application. Claims 13-18 have been allowed. Claim 7-10 have been rejected under 35 U.S.C. § 103 as being unpatentable over Gollner in view of Food Power Design Handbook. Claims 1-4 are rejected under 35 U.S.C. § 103 as being unpatentable over Meier in view of Gollner and Food Power Design Handbook. Applicant respectfully traverses all rejections.

A representative of the Applicant had a phone interview with the Examining Attorney regarding claims 1-5 and 7-11. A proposed amendment to claim 1 and 7 were presented and the proposed amendment to claim 1 has been made to claim 1. However, the proposed amendment to claim 7 has not been made. The Examining Attorney and representative did not come to an agreement regarding the patentability of any of the claims.

Independent claim 1 has been rejected under 35 U.S.C. § 103 as being unpatentable over Meier in view of Gollner and Fluid Power Design Handbook. Claim 1 has been amended to require "wherein when at least one of the system pressure lines is at a threshold pressure, the threshold pressure holds close the electrically proportional control valve when an electrical signal is sent from the control means to open the electrically proportional control valve". This amendment gains its antecedent basis from the original specification at page 9, lines 13-17 that states: "As a further example, when line operates at a high pressure the line pressure such as 100 bar or 1500 PSI or more, the pressure will force and hold close the valves 28, 30 even if an electrical signal is being sent to open the valves 28, 30. Hence the valves 28, 30 are intelligent."

None of the cited prior art references teach the limitation of having an electrically proportional control valve that is

able to at a threshold pressure remain closed even though an electric signal is being sent to the valve for it to open. Gollner instead teaches that when the pressure of the hydraulic fluid in the operating line of the open hydraulic circuit is high that this is detected by the valves 9 and passed onto the digital computer. (Col. 4, lines 46-51). Then depending on calculations by the digital computer causes the valve to stay closed. (Col. 4, lines 52-66). When the digital computer processes its input signals the software of the computer controls the injection system of the combustion engine, and also the activation of valve 9. (Col. 4, line 17-22). Thus at a threshold pressure if the digital computer incorrectly commands the valve 9 to open the valve will do so. In this manner, the present invention is an improvement over Gollner.

The Meier reference teaches a programmable microcontroller 22A that comprises a programmable control electrically connected to the solenoid 48 of a two port two position loop flushing relief valve 42. Thus, the microcontroller 22A electrically and hydraulically actuates and energizes the valve 42. (Col. 4, lines 35-50). The microcontroller 22A generates a signal to open the normally closed loop flushing valve whenever a predetermined system condition or input value is achieved. (Col. 5, lines 7-10). The loop flushing valve 42 however does not intelligently act as the valve of the present invention wherein if a threshold pressure is reached the valve will not open upon receiving a signal from the microprocessor.

The Fluid Design Handbook does not teach the interaction between a valve and a loop flushing circuit and instead just compares multiple valves to one another. Thus, the Fluid Power Design Handbook does not teach a valve that will remain closed at a threshold pressure even when an electric signal is sent by

control means to open that valve. Consequently, a combination of the three prior art references by the Examiner would not result in the device of amended claim 1. Therefore a combination of these prior art references would not result in a device that contained each and every limitation of the invention and the obvious rejection is considered overcome. Claims 2-5 depend on claim 1 and for this reason are also considered in allowable form.

Independent claim 7 is rejected under 35 U.S.C. § 103 as being unpatentable over Gollner in view of Fluid Power Design Handbook. Applicant maintains its position that there is no motivation within these prior art references to combine them to create the present invention. Thus, Applicant maintains the following argument:

An obviousness analysis begins in the text of § 103 with the phrase "at the time the invention was made." For it is this phrase that guards against entry into the "tempting but forbidden zone of hindsight when analyzing the patentability of claims pursuant to that section. See Loctite Corp. v. Ultraseal Ltd., 781 F.2d 861, 873, 228 U.S.P.Q. 90, 98 (Fed. Cir. 1985), overruled on other grounds by Nobelpharma AB v. Implant Innovations, Inc., 141 F.3d 1059, 46 U.S.P.Q.2d 1097 (Fed. Cir. 1998). Measuring a claimed invention against the standard established requires the often difficult but critical step of casting the mind back to the time of the invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and then-accepted wisdom in the field. See, e.g. W.L. Gore & Assoc., Inc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983). Close adherence to this methodology is especially important in the case of less technologically complex inventions, where the very

ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against the teacher." Id.

The best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. See, e.g., C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998) (describing "teaching or suggestion or motivation [to combine] as an essential evidentiary component of an obviousness holding") combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability - the essence of hindsight. See, e.g. Interconnect Planning Corp. v Feil, 774 F.2d 1132, 1138, 277 U.S.P.Q. 543, 547 (Fed. Cir. 1985) ("The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.") In this case, the Examiner has fallen into the hindsight trap.

Evidence of a suggestion, teaching or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem solved, although the suggestion more often comes from the teachings of the pertinent references. Rouffet, 149 F.3d at 1355. The range of sources available does not diminish the requirement for actual evidence. That showing must be clear and particular. See, e.g., C.R. Bard, 157 F.3d at 1352. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not evidence. e.g.,

McElmurry v. Arkansas Power & Light Co., 995 F.2d 1576, 1578, 27 U.S.P.Q.2d 1129, 1131 (Fed. Cir. 1993) ("Mere denials and conclusory statement, however, are not sufficient to establish a genuine issue of material fact.").

In combining Gollner with Fluid Power Design Handbook, the Examiner notes that Gollner discloses Item 21 as a flush valve (electrical 2-position valve for loop flushing). See column 3, line 13. The Examiner notes that the electrical 2-position valve 21 is not disclosed as an electrically proportional control valve, as claimed by Applicant. The Examiner attempts to cure Gollner with the teaching of the Fluid Power Design Handbook. To justify this combination, the Examiner asserts that the Fluid Power Design Handbook teaches "that a modulated electrical flow control valve ... and a proportional spool valve ... are functionally equivalent." Applicant cannot agree. First, nowhere does the Examiner particularly identify any suggestion, teaching, or motivation to combine the prior art references such as the level of ordinary skill in the art, the nature of the problem to be solved, or any other fact or finding that might serve to support a proper obviousness analysis.

To the contrary, the Examiner's decision is based on a discussion of the ways that the multiple prior art references can be combined on the claimed invention. Yet this reference by reference, limitation by limitation analysis fails to demonstrate how one of ordinary skill in the art would be motivated to modify the Gollner reference based on the information in Fluid Power Design Handbook. For example, the Examiner has not explained why, if both 2-positioned valves and proportional solenoid valves were known in the art at the time of the Gollner reference, that Gollner himself did not use an electrically proportional control valve within the flushing

circuit when this option was readily available. In contrast, Gollner, as a person of ordinary skill in the art, chose to use a flushing valve that provided non-proportional operation. In this respect, Gollner itself teaches away from the proposed combination. This is a point that the Examiner did not address in the Final Office Action. See Pro-Mold & Tool, 75 F.3d 1568, 1573, 37 U.S.P.Q.2d. 1626, 1630 (Fed. Cir. 1996).

A factor cutting against a finding of motivation to combine or modify the prior art is when the prior art teaches away from the claimed combination. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path the Applicant took. In re Gurley, 27 F.3d 551, 31 U.S.P.Q.2d 1130, 1131 (Fed. Cir. 1994). Here, because Gollner teaches a non-proportional flushing valve, one skilled in the art upon reading Gollner would have been led in a path divergent from that taken by the Applicant. Accordingly, because the Examiner has not particularly identified any suggestion, teaching, or motivation to combine the prior art references, in addition to the disclosure of Gollner that teaches away from the proposed combination, the Examiner's conclusion of obviousness, as a matter of law, cannot stand.

Additionally, Fluid Power Design Handbook itself teaches away from the propose combination. While the Examiner maintains that the Fluid Power Design Handbook teaches that a modulated electrical flow control valve and a proportional spool valve are functionally equivalent, Applicant cannot agree. Specifically, Fluid Power Design Handbook notes that the "proportional solenoid valve" is in a separate "category" from modulated electrical flow control valves. See page 82, paragraph 5.

Additionally, Fluid Power Design Handbook notes that such "proportional solenoid valves" are "complex" while modulated electrical flow control valves operate to modulate flow by "rapidly opening and closing the valve passage". See page 82, paragraphs 3 and 5. Additionally, in the discussion of modulated on-off valves, at page 83, paragraph 3 - page 84, paragraph 1, Fluid Power Design Handbook does not mention anywhere that such a modulated on-off valve could desirably be replaced with a proportional solenoid valve. In contrast, in discussing the "proportional solenoid valves" at page 84, paragraph 2 - page 87, paragraph 10, Fluid Power Design Handbook extensively discusses the interchangeability and reason for selecting between proportional solenoid valves and a fourth category of valves of a "servovalve". Nowhere in the discussion of "proportional solenoid valves" does Fluid Power Design Handbook teach or suggest that modulated on-off valves are understood in the art to be substantially equivalent to "proportional solenoid valves", and in fact fails to mention the modulated on-off valves anywhere in the detailed discussion of the "proportional solenoid valves" beginning at page 84. Accordingly, as Fluid Power Design Handbook discusses the interchangeability of "proportional solenoid valves" with "servovalves" but fails to discuss any interchangeability between "proportional solenoid valves" with "modulated on-off valves", Applicant submits that the Fluid Power Design Handbook teaches away from substituting a "proportional solenoid valve" for the Item 21 (electrical two-position valve) of Gollner. As the Fluid Power Design Handbook teaches away from the proposed modification of Gollner, the Examiner's conclusion of obviousness as a matter of law, cannot stand.

Applicant notes that the "electrical proportional flow control valve of claim 7 is structurally distinct from the Item 21 (electrical two-position valve) of Gollner, and that this structural distinction has a functional advantage. Specifically, the electrically proportional flow control valve of Applicant's claim 7 has the functional advantage of regulating the flushing flow of the closed loop circuit by selecting the desired loop flushing flow. Conversely, the two-position valve 21 of Gollner only permits an "on" or an "off" flow condition, and does not provide for proportionally regulating the flushing flow of the closed loop circuit. Because a non-proportional electric valve is used in Gollner, an operator is unable to intelligently select the loop flushing flow and thus the system within the Gollner reference will perform inefficiently compared to the present invention. See page 3, lines 13-24 of the present invention.

In view of amended claim 1 and the arguments regarding claim 7, Applicant now considers all claims pending in this application to be in allowable form. As such, Applicant respectfully requests allowance of all claims pending.

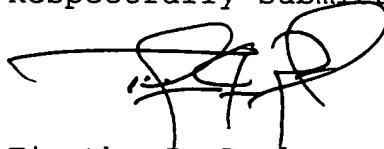
CONCLUSION

In view of the above remarks and arguments, Applicant believes that claims 1-5, 7-11 and 13-18 are in condition for allowance and Applicant respectfully requests allowance of such claims.

If any issues remain that may be expeditiously addressed in a telephone interview, the Examiner is encouraged to telephone the undersigned at 515/558-0200. All fees or extensions of time believed to be due in connection with this response are attached hereto; however, consider this a request for any extension

inadvertently omitted, and charge any additional fees to Deposit Account 50-2098.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'T. Zarley', with a long horizontal line extending to the left.

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